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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,956	03/31/2004	Robert Stephen Lewandowski	132129	8312

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EXAMINER

LOBO, IAN J

ART UNIT

PAPER NUMBER

3662

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,956

Applicant(s)

LEWANDOWSKI ET AL.

Examiner

Ian J. Lobo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,12-17,35-37 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) 13-17 and 40-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10,12,35-37 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 39 do not further limit the subject matter of claims 1 and 35, respectively, and more specifically, appear to contradict each other.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10, 12, 35-37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent to Khuri-Yakub et al ('946) when taken in view of Miller (644) and Watanabe et al ('868).

Per claim 1, Khuri-Yakub et al discloses a sensor device (see Fig. 10) that includes a multiplicity of sensor elements (2) arranged on the front surface of a substrate (11) but not completely through the substrate. The device further includes a

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barrier (23) arranged in the substrate material to reduce the coupling of a form of energy (Lamb waves) between any of the sensor elements.

The differences between claim 1 and the Khuri-Yakub et al device is the claim (a) specifies a multiplicity of barriers whereas in Fig. 10 only a single barrier is shown, and (b) the claim specifies that the barriers and adjoining portions of the substrate are coated with an insulating material.

Miller discloses a sensor device where a plurality of sensor elements (210) are arranged on a substrate (220). The substrate has a plurality of barriers or trenches (215) for reducing coupling energy between sensor elements.

Watanabe et al discloses a semiconductor device wherein trenches, used for reducing cross-talk, are also coated with silicon oxide or silicon nitride (insulators) for reducing cross-talk.

Therefore, in as much as the sensor device of Khuri-Yakub et al includes a multiplicity of sensors, and Miller teaches that it is known to reduce coupling energy between sensor elements by using a plurality of trenches or barriers, it would be obvious to one of ordinary skill in the art to include a multiplicity of barriers between the sensor elements (2) so as to provide for greater reduction of cross-coupling between the multiplicity of sensor elements. Further, in view of Watanabe et al, it would be obvious to coat the trenches with an insulating material to further reduce cross-talk. Claim 1 is so rejected.

Dependent claims 2-5 are further provided by the cMUT array of Khuri-Yakub et al.

Per claims 6 and 35, the barrier (23) of Khuri-Yakub et al is a trench.

Claims 7-10, 12, 36, 37 and 39 are further provided for by the combination of the Khuri-Yakub et al, Miller and Watanabe et al patents.

Response to Arguments

5. Applicant's arguments filed July 13, 2006 have been fully considered but they are not persuasive. It is pointed out that Khuri-Yakub et al shows trenches or barriers that do not completely extend through the substrate. Further, Watanabe et al teaches that insulative coatings in trenches is a well known technique in the semiconductor art for reducing cross-talk.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

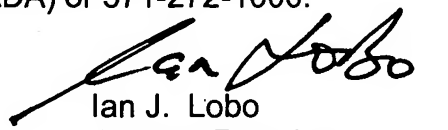
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian J. Lobo whose telephone number is (571) 272-6974. The examiner can normally be reached on Monday - Friday, 6:30 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ian J. Lobo
Primary Examiner
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